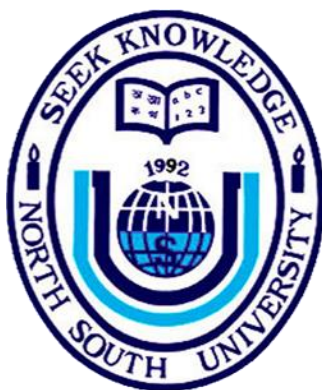


CURRICULUM OF
Bachelor of Pharmacy (BPharm)



Department of Pharmaceutical Sciences
School of Health & Life Sciences (SHLS)

North South University

Bashundhara, Dhaka-1229, Bangladesh

PART A

1. TITLE OF THE PROGRAM : Bachelor of Pharmacy (BPharm)

2. NAME OF THE UNIVERSITY : North South University

3. VISION OF THE UNIVERSITY:

North South University will be and remain a center of excellence in higher education. It will gain recognition, nationally and globally, and will attract students, faculty, and staff from all parts of the world.

4. MISSION OF THE UNIVERSITY:

The mission of North South University is to produce competent graduates in their selected disciplines who will have productive careers or choose to engage in advanced studies.

Our students will be:

- a) Life-long learners with good leadership skills
- b) More proficient in oral, written and electronic communication
- c) Critical thinkers with well-developed analytical skills
- d) Ethical and socially responsible
- e) Champions of diversity and tolerance
- f) Globally aware with commitment to social justice and sustainability

5. NAME OF THE PROGRAM OFFERING ENTITY:

Department of Pharmaceutical Sciences

6. VISION OF THE PROGRAM OFFERING ENTITY:

Develop competent pharmacy graduates who will render Pharmaceutical care and drug and dosage form development to meet the challenges of the 21st century. They will also play an active role in leading in the pharma academia, research and industry.

7. MISSION OF THE PROGRAM OFFERING ENTITY:

- a) Provide state of the art learning and hands-on training to pharmacy students.
- b) Inspire students in developing analytical ability, morality and ethical responsibility.
- c) Advance knowledge in diverse pharmaceutical areas through basic, translational and clinical research.
- d) Expand industry-academia collaboration.

8. OBJECTIVES OF THE BPHARM PROGRAM OFFERING ENTITY:

They will be the best competent Pharmacists in the job market with the necessary skill set.

9. NAME OF THE DEGREE: Bachelor of Pharmacy (BPharm)

10. DESCRIPTION OF THE BPHARM PROGRAM:

The Bachelor of Pharmacy (BPharm) is a 4-year program with 160 credit hours. Maximum 4 probations (when GPA is <2.0) may be considered. Maximum 6 years may be allowed to complete the BPharm degree.

11. BPHARM GRADUATE ATTRIBUTES:

Attribute 1: Deep discipline knowledge and intellectual breadth.

Attribute 2: Creative and critical thinking, and problem solving.

Attribute 3: Teamwork and communication skills.

Attribute 4: Professionalism and leadership readiness.

Attribute 5: Intercultural and ethical competency.

12. BPHARM PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

In the professional life, a graduate will be able to:

PEO-1: Apply knowledge and skills in pharmaceutical manufacturing, quality assurance, and related areas.

PEO-2: Manage pharmaceutical marketing and regulatory affairs.

PEO-3: Promote health and quality of life through patient-centered care in the community, hospital, and clinical pharmacy set up.

PEO-4: Develop professionalism and ethical approaches in interactions with patients, colleagues, members of the healthcare system, and the society.

PEO-5: Demonstrate leadership skills to achieve the healthcare goals of the society.

13. BPHARM PROGRAM LEARNING OUTCOMES (PLOs):

Upon completion of the program, a student will learn how to:

PLO-1: Apply knowledge and skills of pharmaceutical sciences in manufacturing and quality assurance of medicinal products.

PLO-2: Manage portfolio of pharmaceutical product management either individually or in a team.

PLO-3: Collect adequate and accurate data on therapeutic interventions from offline and online sources to deliver optimum professional services.

PLO-4: Perform research in diverse fields related to therapeutic interventions of diseases.

PLO-5: Comply with up-to-date regulatory and ethical guidelines related to pharmacy practice and pharmaceutical products.

PLO-6: Provide professional services as a socially responsible individual and maintain effective communications with members of the community.

14. MAPPING MISSION OF THE UNIVERSITY WITH PEOs

Table 1: Relationship between NSU mission and PEOs

PEOs	NSU Mission					
	a	b	c	d	e	f
PEO-1			√			
PEO-2	√			√		√
PEO-3	√	√	√			
PEO-4					√	√
PEO-5	√					√

15. MAPPING OF PLOS WITH THE PEOs

Table 2: Relationship between PLOs and PEOs

PLOs	Program Educational Objectives				
	PEO1	PEO2	PEO-3	PEO-4	PEO5
PLO-1		√			√
PLO-2			√	√	√
PLO-3	√		√	√	
PLO-4		√			√
PLO-5				√	
PLO-6				√	√

16. MAPPING COURSES WITH THE PROGRAM LEARNING OUTCOMES (PLOs)

Table 3: Relationship of the Courses to the Program Learning Outcomes:

Category	Course	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6
GED	BEN205						√
GED	ENG102			√			√
GED	ENG103						√
GED	HIS103						√
GED	MIS107		√	√			
GED	SOC101/GEO205/ ANT101						√
Core	PHR100	√				√	√
Core	PHR110					√	√
Core	PHR113	√			√		
Core	PHR113L	√			√		
Core	PHR114 /CHE101	√			√		
Core	PHR114L	√			√		
Core	PHR116	√	√	√	√		
Core	PHR120	√			√		
Core	PHR120L	√			√		
Core	PHR121	√			√		
Core	PHR122 / CHE202	√			√		

Category	Course	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6
Core	PHR122L	√			√		
Core	PHR123 / CHE201	√			√		
Core	PHR200	√				√	√
Core	PHR210	√	√		√		
Core	PHR210L	√	√		√		
Core	PHR211	√			√		
Core	PHR211L	√			√		
Core	PHR212	√	√	√	√		
Core	PHR212L	√	√	√	√		
Core	PHR213/BIO201	√		√	√		
Core	PHR214		√	√	√		
Core	PHR215	√			√		
Core	PHR215L	√			√		
Core	PHR221	√	√	√	√		
Core	PHR221L	√	√	√	√		
Core	PHR222	√			√		
Core	PHR222L	√			√		
Core	PHR224	√			√	√	
Core	PHR224L	√			√	√	
Core	PHR225	√		√	√		
Core	PHR226				√		
Core	PHR227	√	√		√		

Category	Course	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6
Core	PHR231				√	√	
Core	PHR231L				√	√	
Core	PHR300	√				√	√
Core	PHR310	√			√		
Core	PHR310L	√			√		
Core	PHR312	√			√	√	
Core	PHR312L	√			√	√	
Core	PHR313		√	√	√		
Core	PHR313L		√	√	√		
Core	PHR324		√	√	√		√
Core	PHR325	√		√	√		
Core	PHR328 / PHR326			√	√		√
Core	PHR332	√	√		√		
Core	PHR332L	√	√		√		
Core	PHR400	√				√	√
Core	PHR410	√			√	√	
Core	PHR411		√	√	√	√	
Core	PHR411L		√	√	√	√	
Core	PHR415	√			√	√	
Core	PHR425		√	√		√	√
Core	PHR426	√	√		√		
Core	PHR428	√		√		√	
Core	PHR433	√		√	√		

Category	Course	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6
Core	PHR433L	√		√	√		
Core	PHR442 / PHR512	√				√	
Core	PHR444 /PHR514		√			√	√
Core	PHR445 /PHR515			√	√	√	√
Core	PHR450	√	√		√		
Core	PHR451				√	√	√
Core	PHR452	√		√		√	

PART B

17. STRUCTURE OF THE CURRICULUM

- a. Duration of the program: Years: 4 Semesters: 8
- b. Admission Requirements:

Academic Qualifications:

Combined GPA of 8.0 (in a total scale of 10) in both SSC and HSC with a minimum GPA of 3.5(in a scale of 5) in each from Science Group. Students must have a GPA of 4 (in a scale of 5) in Physics, Chemistry, and Biology in both SSC and HSC.

OR

GCE O-Levels and A-Levels: O-Levels in five subjects with a minimum Average Grade Point of 2.5 and A-Levels in two subjects with a minimum Average Grade Point of 2.0. Only one 'E' Grade is acceptable in combined O & A-Levels. (scale A=5, B=4, C=3, D=2 & E=1). In "A" Level, "B" grade in Physics, Chemistry, and Biology, and at least "C" grade in Mathematics is required;

OR

US High School Diploma, IB Diploma Program (IB-DP) or equivalent. must have Physics, Chemistry, and Biology along with a minimum GPA of 4 (in a scale of 5) and Mathematics with a minimum GPA of 3.5 (in a scale of 5);

Foreign Applicants: Candidates must have a minimum avg 60% marks in Grade 10th and 12th.

Additional requirements:

Updated requirements should be checked on the homepage of the Pharmacy Council of Bangladesh (PCB) (<http://www.pcb.gov.bd/>).

- c. Total minimum credit requirement to complete the program: 160
- d. Total class weeks in a Year/semester ν : 12 weeks per semester (6 months, specified by the PCB)
- e. Minimum CGPA requirements for graduation: 2.0
- f. Maximum academic years of completion: 06
- g. Category of Courses:
 - i. General Education Courses (GED): (Interdisciplinary courses, beyond the discipline/program, that provides a well-rounded learning experience to the students of an academic program) For example: Arts and Humanities, Social Sciences, ICT, Basic Science/STEM etc.
 - ii. Core courses (Courses that characterize the discipline)
 - iii. Internship/thesis/Projects

GED/Core	SUM of Credit
1. University Core (GED)	18
2. School (SHLS) Core	21
3. Program Core	103
4. Elective Courses (Any three)	9
5. Open Elective	9
Grand Total	160

SUM of Credit	Type						
Semester	GED	Internship	Lab	Project	Theory	Viva	Grand Total
1	12				5		17
2	6		3		12	1	22
3			3		18		21
4			3		17	1	21
5			3		19		22
6			2		18	1	21
7		3	3	5	9		20
8					15	1	16
Grand Total	18	3	17	5	113	4	160

18. SEMESTER WISE DISTRIBUTION OF COURSES

Semester	Course	Credit	Title	Prerequisite	GED/Core
1	BEN205	3	Bengali Language and Literature		1- University Core (GED)
1	ENG102	3	Introduction to Composition		1- University Core (GED)
1	HIS103	3	Emergence of Bangladesh		1- University Core (GED)
1	PHR110	2	Introduction to Pharmacy		3-Program Core
1	PHR113	3	Pharmacognosy		3-Program Core
1	SOC101/AN T101	3	Introduction to Sociology/Introduction to Anthropology		1- University Core (GED)
2	ENG103	3	Intermediate Composition	ENG102	1- University Core (GED)
2	MIS107	3	Information System & Computing		1- University Core (GED)
2	PHR100	1	Viva Voce	PHR110, PHR113, ENG102	3-Program Core

Semester	Course	Credit	Title	Prerequisite	GED/Core
2	PHR113L	1	Pharmacognosy Lab		3-Program Core
2	PHR114/CHE 101	3	Organic Pharmacy-I/General Chemistry	PHR110	2-School (SHLS) Core
2	PHR114L	1	Organic Pharmacy Lab-I	PHR110	2-School (SHLS) Core
2	PHR116	3	Mathematics and Statistics		3-Program Core
2	PHR120	3	Inorganic Pharmacy		3-Program Core
2	PHR120L	1	Inorganic Pharmacy-Lab		3-Program Core
2	PHR121	3	Human Physiology-I	PHR110	2-School (SHLS) Core
3	PHR123/CHE 201	3	Physical Pharmacy-I/Biophysical Chemistry	PHR110	2-School (SHLS) Core
3	PHR211	3	Human Physiology-II	PHR121	3-Program Core
3	PHR211L	1	Human Physiology Lab	PHR121	3-Program Core
3	PHR212	3	Pharmaceutical Technology-I	PHR123, PHR110	3-Program Core
3	PHR212L	1	Pharmaceutical Technology Lab-I	PHR114L, PHR123	3-Program Core
3	PHR213/BIO 201	3	Biochemistry & Cell Biology/Introduction to Biochemistry & Biotechnology	PHR110, PHR121	2-School (SHLS) Core

Semester	Course	Credit	Title	Prerequisite	GED/Core
3	PHR224	3	Pharmaceutical Analysis-I	PHR114, PHR120	3-Program Core
3	PHR224L	1	Pharmaceutical Analysis-Lab-I	PHR114, PHR120	3-Program Core
3	PHR226	3	Pharmaceutical Dispensing	PHR110	3-Program Core
4	PHR122/CHE 202	3	Organic Pharmacy - II/Bioorganic Chemistry	PHR114	2-School (SHLS) Core
4	PHR122L	1	Organic Pharmacy Lab-II	PHR114, PHR114L	2-School (SHLS) Core
4	PHR200	1	Viva Voce	PHR110	3-Program Core
4	PHR210	3	Physical Pharmacy-II	PHR123, PHR110	2-School (SHLS) Core
4	PHR210L	1	Physical Pharmacy-Lab	PHR123	2-School (SHLS) Core
4	PHR214	3	Pharmacology & Clinical Pharmacy-I	PHR121, PHR110	3-Program Core
4	PHR215	3	Medicinal Chemistry-I	PHR114	3-Program Core
4	PHR227	2	Human Anatomy	PHR110	3-Program Core
4	PHR231	3	Pharmaceutical Microbiology		3-Program Core
4	PHR231L	1	Pharmaceutical Microbiology Lab	PHR120	3-Program Core
5	PHR215L	1	Medicinal Chemistry Lab-I	PHR114, PHR114L	3-Program Core

Semester	Course	Credit	Title	Prerequisite	GED/Core
5	PHR221	3	Pharmaceutical Technology-II	PHR123, PHR212, PHR210	3-Program Core
5	PHR221L	1	Pharmaceutical Technology Lab-II	PHR212, PHR212L	3-Program Core
5	PHR222	3	Medicinal Chemistry-II	PHR122, PHR215	3-Program Core
5	PHR222L	1	Medicinal Chemistry Lab-II	PHR215, PHR215L	3-Program Core
5	PHR225	3	Basic Pathology & Toxicology	PHR121	4-Elective Courses (Any three)
5	PHR312	3	Pharmaceutical Analysis-II	PHR224	3-Program Core
5	PHR312L	1	Pharmaceutical Analysis-Lab-II	PHR224, PHR224L	3-Program Core
5	PHR325	3	Pharmaceutical Biotechnology-I	PHR124, PHR213	3-Program Core
5	PHR442/PHR 512	3	Pharmaceutical Engineering	PHR212/ PHR221	3-Program Core
6	PHR300	1	Viva Voce	PHR212, PHR214	3-Program Core
6	PHR310	3	Pharmaceutical Technology-III	PHR210, PHR212 PHR221	3-Program Core
6	PHR313	3	Pharmacology & Clinical Pharmacy-II	PHR211, PHR214	3-Program Core
6	PHR313L	1	Pharmacology Lab-I	PHR211L, PHR214	3-Program Core

Semester	Course	Credit	Title	Prerequisite	GED/Core
6	PHR314L	1	Biopharmaceutics & Pharmacokinetics-Lab I	PHR214, PHR121	3-Program Core
6	PHR324	3	Pharmacology & Clinical Pharmacy-III	PHR214, PHR313	3-Program Core
6	PHR332	3	Biopharmaceutics & Pharmacokinetics	PHR121, PHR211, PHR214	3-Program Core
6	PHR428	3	Quality Assurance & Quality Control	PHR221, PHR312	4-Elective Courses (Any three)
6	PHR445/PHR 515	3	Hospital and Community Pharmacy	PHR313	4-Elective Courses (Any three)
7	PHR310L	1	Pharmaceutical Technology Lab-III	PHR221, PHR221L, PHR310	3-Program Core
7	PHR328/PHR 326	3	Principles of Pharmacotherapy/Pharmacotherapy I	PHR313, PHR324	4-Elective Courses (Any three)
7	PHR411L	1	Pharmacology Lab-II	PHR313, PHR313L	3-Program Core
7	PHR426	3	Clinical Pharmacokinetics	PHR313, PHR314	3-Program Core
7	PHR433	3	Pharmaceutical Biotechnology-II	PHR325	3-Program Core
7	PHR433L	1	Pharmaceutical Biotechnology Lab	PHR325, PHR231L	3-Program Core
7	PHR450	5	Project	PHR212, PHR221	3-Program Core
7	PHR451	1	Pharmacy Practice Experience	PHR212, PHR221	3-Program Core

Semester	Course	Credit	Title	Prerequisite	GED/Core
7	PHR452	2	Internship	PHR212, PHR221	3-Program Core
8	PHR400	1	Viva Voce	PHR310, PHR324	3-Program Core
8	PHR410	3	Advanced Pharmaceutical Analysis	PHR224, PHR312	3-Program Core
8	PHR411	3	Pharmacology & Clinical Pharmacy-IV	PHR313, PHR324	3-Program Core
8	PHR415	3	Pharmaceutical Technology-IV	PHR212, PHR221, PHR310	3-Program Core
8	PHR425	3	Pharmaceutical Marketing and Management	PHR310, PHR324	4-Elective Courses (Any three)
8	PHR444/PHR 514	3	Pharmacy Law and Regulatory Affairs	PHR324	4-Elective Courses (Any three)

PART C

19. DESCRIPTION OF ALL COURSES OF THE PROGRAM INCLUDING THE FOLLOWING INFORMATION FOR EACH COURSE:

[Separate pages added for individual courses]

Part D

20. GRADING/EVALUATION

Grading policy

Letter grades indicating the quality of course work completed is interpreted as follows:

Numerical Scores	Letter Grade	Grade Points (Per Credit)
93 and above	A Excellent	4
90 - 92	A-	3.7
87 - 89	B+	3.3
83 - 86	B Good	3
80 - 82	B-	2.7
77 - 79	C+	2.3
73 - 76	C Average	2
70 - 72	C-	1.7
67 - 69	D+	1.3
60 - 66	D Poor	1
Below 60	F* Failure	0
	I** Incomplete	0
	W** Withdrawal	0
	R** Retaken	0

* Credits for courses with this grade do not apply towards graduation.

** Credits for courses with this grade do not apply towards graduation and they are not accepted in the calculation of the grade point average.

The exact cut-off points for assigning letter grades is at the discretion of the individual instructor. The same applies to the assignment of + or - after a letter grade. It is meant to give more flexibility so that shades of performance can be distinguished and rewarded. The + and - has a value of 0.3 grade point.

Grade Point Average (GPA)

Students' grade-point averages are numerical values obtained by dividing the total grade points earned by the credits attempted. Only courses' graded A, A-, B+, B, B-, C+, C, C-, D+, D, and F are used to determine credits attempted. Only the grades earned in the courses that are required for a degree are included in the GPA calculation. Grades earned in other courses are reported on the transcript but are not counted in calculating the GPA.

GPA - Class Equivalence

NSU students are graded on GPA. Comparison of the GPA earned by NSU students to the Classes earned by students in other universities in the country is as follows:

GPA 3.00 and above = First Class

GPA 2.50 to 2.99 = Second Class

GP A 2.00 to 2.49 = Third Class

Grade Change

Grade change is strongly discouraged. Letter grades may be changed only for posting errors or errors in calculation. If a grade change is inevitable, it must be completed within one semester following the submission of the grade. The program directors and department chairs will ask for necessary papers and records to substantiate the grade change.

Incomplete (I)

The grade of Incomplete (I) may be used in special circumstances. The Incomplete may be given only at the end of a semester to a student whose work is progressing, "but who has left unfinished a small amount of work for completion without further class attendance. The instructor must file with the Registrar an Incomplete Grade form describing the work to be completed, indicating a tentative final grade to be assigned if the work is not completed and the time period in which the work must be completed (no longer than the following semester).

The student has the responsibility to take the initiative in completing the work and is expected to make up the incomplete as specified by the instructor. If action is not taken the "I" grade will revert to the tentative final grade. The final grade becomes an "F" if no tentative grade is assigned. In the event the instructor from whom a student received an incomplete is not available, the disposition of a case involving

an incomplete grade resides with the Head of the Department. The grade 'I' must be replaced within one semester after the grade is assigned.

Withdrawal (W)

The grade Withdrawal (W) is assigned when a student officially drops a course during the period between the ends of the third and sixth week. Prior to that time if a student drops a course no entry is made on the academic record. A "W" does not affect the student's GPA.

Retaking Courses

Students may elect to repeat a course. When a student retakes a course, the actual grade will be recorded instead of "R". All passing grades will be used to calculate the CGPA even if a course is retaken. When a student retakes a course in which student received "F" grade(s) earlier, s/he must apply not to include the "F" grade(s) in his/her CGPA calculation. An "F" grade earned in any credit course will be used to calculate CGPA until the course is retaken and an application is submitted. The retake policy in case of courses with "F" grades will apply immediately to all students at NSU irrespective of their date of enrollment. There will be no limit on the number of times a course can be retaken. This retake policy is effective from Spring 2003 semester.

Students who wish to retake a course must register for the course again and will be assessed tuition and applicable fees.

Abandoning Course

Grades F will be recorded for students who have not fulfilled academic obligations and have not obtained a grade, and for students who abandon their courses without officially withdrawing from a course.